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PATENT

Attorney Reference Number 4630-58963
Application Number 09/857,583

Listing of Claims

1. (Currently Amended) A purified protein having Δ^8 fatty acid desaturase activity, and comprising an amino acid sequence selected from the group consisting of:
 - (a) an amino acid sequence as shown in SEQ ID NO: 4;
 - (b) an amino acid sequence that differs from that specified in (a) by one or more conservative amino acid substitutions; and
 - (c) an amino acid sequences having at least 95% sequence identity to the sequences specified in (a) or (b).
2. (Original) An isolated nucleic acid molecule encoding a protein according to claim 1.
3. (Previously Presented) The isolated nucleic acid molecule of claim 2, comprising a sequence as shown in SEQ ID NO: 3.
4. (Original) A recombinant nucleic acid molecule, comprising a control sequence operably linked to the nucleic acid sequence of claim 2.
5. (Original) A cell transformed with the recombinant nucleic acid molecule of claim 4.
6. (Currently Amended) A cell transformed with the recombinant nucleic acid molecule of claim 4 and a nucleic acid molecule that encodes a protein having Δ^5 fatty acid desaturase activity, selected from the group consisting of:
 - (a) a nucleic acid molecule as shown in SEQ ID NO: 1; and
 - (b) a nucleic acid molecule that has at least 95% sequence identity to the nucleic acid molecule shown in (a).
7. (Original) The cell of claim 5, wherein the cell is a plant cell.

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8. (Currently Amended) An isolated nucleic acid molecule that:
(a) hybridizes under high-stringency conditions with a nucleic acid probe, the probe comprising a sequence as shown in SEQ ID NO: 3; and
(b) encodes a protein having Δ^8 fatty acid desaturase activity.
9. (Currently Amended) An isolated or recombinant Δ^8 fatty acid desaturase encoded by the nucleic acid molecule of claim 8.
10. (Original) A recombinant nucleic acid molecule, comprising a promoter sequence operably linked to the nucleic acid molecule of claim 8.
11. (Original) A cell transformed with the recombinant nucleic acid molecule of claim 10.
12. and 13. (Canceled)
14. (Currently Amended) An isolated nucleic acid molecule that:
(a) has at least 95% sequence identity with a nucleic acid sequence as shown in SEQ ID NO: 3; and
(b) encodes a protein having Δ^8 fatty acid desaturase activity.
15. through 27. (Canceled)
28. (Currently Amended) The isolated nucleic acid molecule of claim 8, wherein the nucleic acid molecule hybridizes under very high-stringency conditions with said ~~the~~ nucleic acid probe.
29. (Currently Amended) An isolated or recombinant Δ^8 fatty acid desaturase encoded by the nucleic acid molecule of claim 28.

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30. (Previously Presented) A recombinant nucleic acid molecule, comprising a promoter sequence operably linked to the nucleic acid molecule of claim 28.

31. (Previously Presented) A cell transformed with the recombinant nucleic acid molecule of claim 30.